

## CLAIMS

What is claimed is:

- 1 1. An apparatus comprising:  
2 an amplifier;  
3 a gain circuit coupled to an output of the amplifier, the gain circuit to provide at least  
4 two gain values in response to the output of the amplifier; and  
5 a control circuit to provide one of the at least two gain values as an output.
- 1 2. The apparatus as claimed in claim 1, wherein the gain circuit includes at least two  
2 equalization circuits each providing a respective one of the at least two gain values.
- 1 3. The apparatus as claimed in claim 2, wherein the at least two equalization circuits are  
2 coupled in series to the output of the amplifier.
- 1 4. The apparatus as claimed in claim 2, wherein each of the at least two equalization  
2 circuits include an RC filter.
- 1 5. The apparatus as claimed in claim 4, wherein a resistance R and a capacitance C of  
2 the RC filter are implemented using on-chip components.
- 1 6. The apparatus as claimed in claim 4, wherein a resistance R of the RC filter is  
2 implemented using passive components.
- 1 7. The apparatus as claimed in claim 4, wherein a resistance R of the RC filter is  
2 implemented using active components.

1 8. The apparatus as claimed in claim 4, wherein all resistors in the apparatus are formed  
2 of a same technology.

1 9. The apparatus as claimed in claim 8, wherein the same technology is a poly resistance  
2 technology

1 10. The apparatus as claimed in claim 4, wherein R and C values of the RC filter are fixed  
2 during a circuit design phase.

1 11. The apparatus as claimed in claim 1, wherein the amplifier is a CMOS amplifier and  
2 the gain circuit is a CMOS gain circuit.

1 12. The apparatus as claimed in claim 11, wherein the gain circuit includes at least two  
2 equalization circuits each providing a respective one of the at least two gain values.

1 13. The apparatus as claimed in claim 12, wherein the at least two equalization circuits  
2 are coupled in series to the output of the amplifier.

1 14. The apparatus as claimed in claim 13, wherein each of the at least two equalization  
2 circuits include an RC filter.

1 15. The apparatus as claimed in claim 1, wherein the control circuit includes a DC  
2 feedback circuit and the output provided by the control circuit is selected in response to the  
3 DC feedback circuit.

1 16. The apparatus as claimed in claim 15, wherein the DC feedback circuit uses DC  
2 balance to help select the output.

1 17. A system comprising:  
2 a transmitter;  
3 a receiver; and  
4 an interconnect coupled to the transmitter and the receiver;  
5 wherein the receiver includes an equalization circuit comprising:  
6 an amplifier;  
7 a gain circuit coupled to an output of the amplifier, the gain circuit to provide  
8 at least two gain values in response to the output of the amplifier; and  
9 a control circuit to provide one of the at least two gain values as an output..

1 18. The system as claimed in claim 17, wherein the gain circuit includes at least two  
2 equalization circuits each providing a respective one of the at least two gain values.

1 19. The system as claimed in claim 18, wherein the at least two equalization circuits are  
2 coupled in series to the output of the amplifier.

1 20. The system as claimed in claim 18, wherein each of the at least two equalization  
2 circuits include an RC filter.

1 21. The system as claimed in claim 17, wherein the amplifier is a CMOS amplifier and  
2 the gain circuit is a CMOS gain circuit.

1 22. The system as claimed in claim 21, wherein the gain circuit includes at least two  
2 equalization circuits each providing a respective one of the at least two gain values.

1 23. The system as claimed in claim 22, wherein the at least two equalization circuits are  
2 coupled in series to the output of the amplifier.

1 24. The system as claimed in claim 23, wherein each of the at least two equalization  
2 circuits include an RC filter.

1 25. The system as claimed in claim 17, wherein the control circuit includes a DC  
2 feedback circuit and the output provided by the control circuit is selected in response to the  
3 DC feedback circuit.

1 26. The system as claimed in claim 25, wherein the DC feedback circuit uses DC balance  
2 to help select the output.

1 27. A method comprising:  
2 providing at least two discrete gain signals; and  
3 adaptively selecting one of the gain signals as an output signal.

1 28. The method as claimed in claim 27, wherein the at least two discrete gain signals are  
2 providing using equalization.

1 29. The method as claimed in claim 28, wherein the equalization is performed in a  
2 cascaded fashion.

1 30. The method as claimed in claim 29, wherein the cascaded equalization includes an RC  
2 filter technique.

1 31. The method as claimed in claim 27, wherein the selecting is performed based on DC  
2 feedback.

1 32. The method as claimed in claim 31, wherein the DC feedback uses DC balance to  
2 help select the output.